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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/684,374 | 10/15/2003 | Yoichi Ando | 03500.017648 | 3377 |

5514 7590 05/04/2005

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EXAMINER

QUARTERMAN, KEVIN J

ART UNIT PAPER NUMBER

2879

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

SM

| | | | | |
|------------------------------|------------------------|--|---------------------|--|
| Office Action Summary | Application No. | | Applicant(s) | |
| | 10/684,374 | | ANDO, YOICHI | |
| | Examiner | | Art Unit | |
| | Kevin Quarterman | | 2879 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☒ Claim(s) 1 and 2 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>0704</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
2. The following title is suggested: --ELECTRON BEAM APPARATUS WITH POTENTIAL SPECIFYING PLATE STRUCTURE--.
3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. The abstract of the disclosure is objected to because it contains more than 150 words. Correction is required. See MPEP § 608.01(b).

Drawings

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: characters "103" and "110" of Figure 9. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are

required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

6. Claims 1 and 2 are objected to because of the following informalities: It appears to the Examiner that the term "in" following the term "wherein" in both claims 1 and 2 should either be removed or replaced with another term such as *when*. Claim 1 currently reads as "wherein in a distance...is D1", which is unclear. It also appears to the Examiner that the term "by" preceding "D3" in claim 2 should be replaced with the term "is" for consistency in the claims. Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 3 and 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. Claims 3 and 4 both recite the limitation "another region" in the last line of the claims. There is insufficient antecedent basis for this limitation in the claims. It is unclear to the Examiner which region is the "another region." The "another region" is not clearly defined in the specification or clearly shown in the drawings.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Fushimi (US 5,936,343).

12. Regarding independent claim 1, Figure 1 of Fushimi shows an electron beam apparatus comprising an electron source including an electron-emitting device (102); an electron beam irradiation member (110) which is opposed to the electron source and irradiated with an electron emitted from the electron-emitting device; a potential specifying plate (105) which is located between the electron source and the electron beam irradiation member and which includes a plurality of openings through which the electron emitted from the electron-emitting device transmits; and a spacer (113) located between the electron beam irradiation member and the potential specifying plate, wherein in a distance between a region between one opening of the plurality of openings of the potential specifying plate which is near the spacer and the spacer and the electron beam irradiation member is D1 and a distance between a region between

the one opening of the potential specifying plate which is near the spacer and another opening of the plurality of openings of the potential specifying plate which is not near the spacer and the electron beam irradiation member is D2, a relationship $D1 < D2$ is satisfied.

13. The Examiner notes that the term "region" is defined as an indefinite area or an open connected set together with none, some, or all of the points of its boundary (Merriam-Webster's Collegiate Dictionary, 10th Ed.). Since claims are given their broadest reasonable interpretation (MPEP § 2111), the *regions* of independent claim 1 may be arbitrarily defined. For instance, in Figure 1 of Fushimi, the distance D1 can be defined from the top of the conductive connection member (107) to the electron beam irradiation member (110) and the distance D2 can be defined from the top of the potential specifying plate (105) to the electron beam irradiation member (110), which would satisfy the relationship $D1 < D2$ as claimed in independent claim 1.

14. Regarding independent claim 2, using the above interpretation for independent claim 1, Figure 1 of Fushimi shows an electron beam apparatus comprising an electron source including an electron-emitting device (102); an electron beam irradiation member (110) which is opposed to the electron source and irradiated with an electron emitted from the electron-emitting device; a potential specifying plate (105) which is located between the electron source and the electron beam irradiation member and which includes a plurality of openings through which the electron emitted from the electron-emitting device transmits; and a spacer (113) located between the electron beam irradiation member and the potential specifying plate, wherein in a distance between a

region between one opening of the plurality of openings of the potential specifying plate which is near the spacer and the spacer and the electron-emitting device is D3 and a distance between a region between the one opening of the potential specifying plate which is near the spacer and another opening of the plurality of openings of the potential specifying plate which is not near the spacer and the electron-emitting device is D4, a relationship $D3 > D4$ is satisfied.

15. Regarding claim 3, Figure 1 of Fushimi shows a thickness (h) of the region between the one opening of the potential specifying plate which is near the spacer and the spacer being larger than a thickness (Tc) of another region.

16. Regarding claim 4, Figure 1 of Fushimi shows a thickness (h) of the region between the one opening of the potential specifying plate which is near the spacer and the other opening of the potential specifying plate which is not near the spacer is larger than a thickness (Tc) of another region.

17. Regarding claim 5, Figure 1 of Fushimi shows the potential specifying plate having, between the opening near the spacer and the spacer, a protrusion (107) protruding toward a side of the electron beam irradiation member.

18. Regarding claim 6, Figure 1 of Fushimi shows the potential specifying plate having, between the opening near the spacer and the another opening not near the spacer, a protrusion (107) protruding toward a side of the electron beam irradiation member.

Conclusion

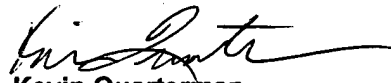
19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yamaguchi (US 5,955,850) discloses a field emission display device. Ueda (US 6,828,722) discloses an electron beam apparatus.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Quarterman whose telephone number is (571) 272-2461. The examiner can normally be reached on M-TH (7-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Kevin Quarterman
Examiner
Art Unit 2879